# POLIOMYELITIS IN NEW YORK CITY

## Progress Report of the Sub-committee

In 1928 the Public Health Committee appointed a sub-committee consisting of Drs. Royal S. Haynes, George Draper, W. Lloyd Aycock, William H. Park, Simon Flexner, Josephine B. Neal, Philip Van Ingen, Harold L. Amoss, E. H. L. Corwin and Linsly R. Williams, to carry out an experiment on the treatment of early cases of poliomyelitis with human convalescent serum.

A small sum of money was secured and human convalescent serum obtained from a large number of individuals, the majority of whom offered their blood in order to help others. This serum was collected by a number of younger physicians, chiefly at the Cornell Clinic. The Committee expresses its appreciation to the staff of the Clinic for its most helpful coöperation.

A number of the younger physicians in the city who were interested in the scheme have coöperated with the Committee in the administration of the serum. The following brief report of the work done by these young physicians has been prepared by Dr. Alfred E. Fischer:

The results of the work have been encouraging enough to warrant further study. While no complete analysis as yet has been made because of insufficient data, the Committee feels that a preliminary statement of the results of the therapy may be made at this time.

In 1928 there were 61 cases of poliomyelitis treated with serum. Twenty-one of this number were preparalytic of which 3 died. Of 12 cases in which paralysis was present less than 12 hours, 2 died, a mortality of 15 per cent. The remaining cases were paralyzed longer than 12 hours when serum was administered. Thirteen out of 30, a mortality of 33 per cent, died in the latter group. This compares with

a mortality of 29 per cent of 67 cases treated at Willard Parker Hospital during the same year, and a general city mortality of 26 per cent.

In 1929 there were 71 and in 1930, 78 cases of poliomyelitis in the city. Only 3 cases of preparalytic poliomyelitis in 1929 received serum, and 1 in whom paralysis was present less than 12 hours also received serum. None of these died.

In 1930, 6 preparalytic cases and 1 in whom paralysis was present less than 12 hours were treated. None of these died. The total number of preparalytic cases treated during the 3 years was 30 and 14 patients were treated in whom paralysis was present less than 12 hours.

The mortality of poliomyelitis in New York City during the year 1929 was 35 per cent and during 1930 was 16 per cent. In each of these years the morbidity was low and the difference in mortality does not necessarily mean an increased virulence of the disease in 1929. It suggests rather an insufficient number of cases upon which to make a comparison and reminds us that large groups of cases must be used when estimating therapeutic results.

The extent to which paralysis has been modified in cases that have received serum is beyond the scope of this report. In years when the morbidity is high a comparison of treated and untreated cases can be made with regard to end-results. In non-epidemic years the number is too few for comparison.

The following case, which was treated by Dr. J. M. Lewis, is typical of the group we have been studying:

A. B., 8 years old, became ill on September 27th, 1930. He vomited and had a temperature of 102° on that day. On September 30th his neck became stiff and on October 4th and 5th, he developed a paralysis of some of the muscles of his right arm and both lower legs.

His young brother, J. B., age 3 years, became ill on October 5th with a temperature of 103° and the following

day his neck became somewhat stiff. He was flushed, had an injected throat and his spine was rigid. His deep reflexes were exaggerated and he had a slightly positive Kernig sign. Because of these symptoms and the fact that the brother had a definite poliomyelitis, a lumbar puncture was done 33 hours after the onset. The spinal fluid was clear, contained 40 cells of which the majority were lymphocytes. At the same time 20 c.c. of convalescent poliomyelitis serum was given intraspinously and 40 c.c. intravenously. The following day a second dose of 20 c.c. was given intraspinously. Due to the serum there was an increase in the rigidity of the neck and spine but within a week this had cleared up. When seen on October 20th, 15 days after the onset of his illness, he had no paralysis in striking contrast to the disease in his brother.

This was a contact case of poliomyelitis which when seen by one of the members of the Poliomyelitis Committee was in the preparalytic stage. The presence of the disease in the brother suggested the diagnosis which was confirmed by the clinical symptoms and spinal fluid findings.

The work will be continued this year and physicians are asked to notify the Academy of early and suggestive cases so that the diagnosis can be verified by a member of the Committee and serum injected. A therapeutic result is always most difficult to evaluate and it is only by a carefully controlled study over a period of time that the efficacy of the serum can be accurately determined.